Planning Partnership

A Planning Partnership has signed a Memorandum of Understanding to cooperatively investigate North-of-the-Delta Offstream Storage. The Partnership includes:

- Glenn-Colusa Irrigation District
- Tehama-Colusa Canal Authority
- Orland Unit Water Users' Association
- County of Colusa
- Sutter Mutual Water Company
- Reclamation District No. 108
- Princeton-Cordora-Glenn Irrigation District
- Provident Irrigation District
- Natomas Mutual Water Company
- Maxwell Irrigation District
- Yolo County Flood Control and Water Conservation District
- United States Bureau of Reclamation, Mid-Pacific Region
- Colusa Drain Mutual Water Company
- Western Area Power Administration
- United States Fish and Wildlife Service
- California Department of Water Resources
- California Department of Fish and Game

Completed Studies

- ESA protocol level surveys
- Wetland delineations
- Engineering studies:
  - use or expansion of Glenn-Colusa Irrigation District Canal
  - use or expansion of Tehama-Colusa Canal
  - diversion & conveyance from Sacramento River opposite Moulton Weir
  - Funks Reservoir enlargement
  - Sites Reservoir dams and appurtenant structures
  - road relocations
  - conveyance for Newville Reservoir
  - diversion and conveyance from Stony Creek
  - Newville Reservoir dams and appurtenant structures
- Fish and wildlife surveys
- Recreation opportunities

Ongoing Studies

- Sacramento River flow regime
- Cultural and historical resources
- CalSim II Operations modeling studies of NODOS scenarios
- Indian trust assets
- Socioeconomics
- Environmental justice
- Public health and environmental hazards
- Water quality
- Power production and energy
- Groundwater and surface water resources

North-of-the-Delta Offstream Storage Schedule	2001	2002	2003	2004	2005	2006	2007	2008
Planning								
Notice of Intent and Notice of Preparation	Nov-01							
Public Scoping		Jan-02						
Scoping Report		Oct-02						
Initiation of Federal Feasibility Studies			Sep-03					
Initial Alternatives Information Report						May-06		
Plan Formulation Report							Sep-07	
Draft Feasibility Study Report and Environmental Documentation								Apr-08
Final Feasibility Study Report and Environmental Documentation								Aug-08

North-of-the-Delta Offstream Storage

www.storage.water.ca.gov/northdelta/index.cfm

North-of-the-Delta Offstream Storage

www.storage.water.ca.gov/northdelta/index.cfm

The California Department of Water Resources, U.S. Bureau of Reclamation, and their partners are studying offstream storage north of the Sacramento – San Joaquin Delta in coordination with the California Bay-Delta Authority. The study includes Sites Reservoir (as directed by the CALFED Record of Decision) and alternatives (in compliance with Section 404 (b) (1) of the Clean Water Act, the California Environmental Quality Act, and the National Environmental Policy Act).

Potential Project Benefits

Preliminary planning studies indicate project implementation could support a broad range of potential benefits including:

- Provide water supply and water supply reliability for:
  - SWP
  - CVP
  - EWA
  - Level 4 refuge
  - Local
- Support ecosystem restoration efforts in the Sacramento River
  - Stabilize fall and winter flows from Keswick to Red Bluff
  - Improve fish passage at the Red Bluff Diversion Dam
  - Reduce Tehama-Colusa and Glenn-Colusa Irrigation District canals irrigation diversions
  - Restore "snowmelt pattern" in specific years to support riparian and aquatic habitat
  - Improve the reliability of Shasta Lake cold water pool and Sacramento River temperature for anadromous fish
- Improve Delta water quality
- Improve flood protection
- Provide water for Delta emergency response (i.e. levee breaks)
- Provide ancillary hydropower generation benefits
- Increase recreational opportunities
- Improve system flexibility

Climate Change and Flood Protection

Additional storage and flexibility created by NODOS can help mitigate the effects of changing hydrology and decreasing snowpack on California's water system and provide water supply for additional water needs associated with higher temperatures resulting from climate change. In addition, NODOS can improve the flood protection for the Sacramento River basin upstream of the Delta by increasing flood control reservation space in existing reservoirs through exchange of storage capacity in NODOS.

Preliminary Project Cost Estimates

Capital Cost: $2.06-$3.01[(1)] Billion

Main Project Features	$2.06 Billion Configuration	$3.01 Billion Configuration
2 Main dams and 9 saddle dams	♦	♦
Pumping/Generating Plant at Golden Gate Dam 4,000 cfs	♦	
6,000 cfs		♦
Funks Reservoir enlargement 4,000 cfs	♦	
6,000 cfs		♦
Tehama-Colusa Canal (2,100 cfs)	♦	♦
Glenn-Colusa Irrigation District Canal (1,800 cfs)	♦	♦
New Pipeline for release flow only (1,500 cfs)		♦
Lower Stony Creek Pipeline (2,100 cfs)		♦
Tehama-Colusa Canal Expansion below Stony Creek Confluence (2,100 cfs)		♦
Road Relocation	♦	♦
Recreation Facilities	♦	♦

(1) The cost estimates are at the preliminary feasibility level of detail and are subject to change. The range of project cost estimates reflects the range of conveyance options and appurtenant structures under consideration. Cost estimates do not include annual operations and maintenance, mitigation, or power costs, nor interest during construction.

Benefit Estimates Based on Various Operational Scenarios

Water Supply (SWP, CVP, Local, Level 4, EWA):

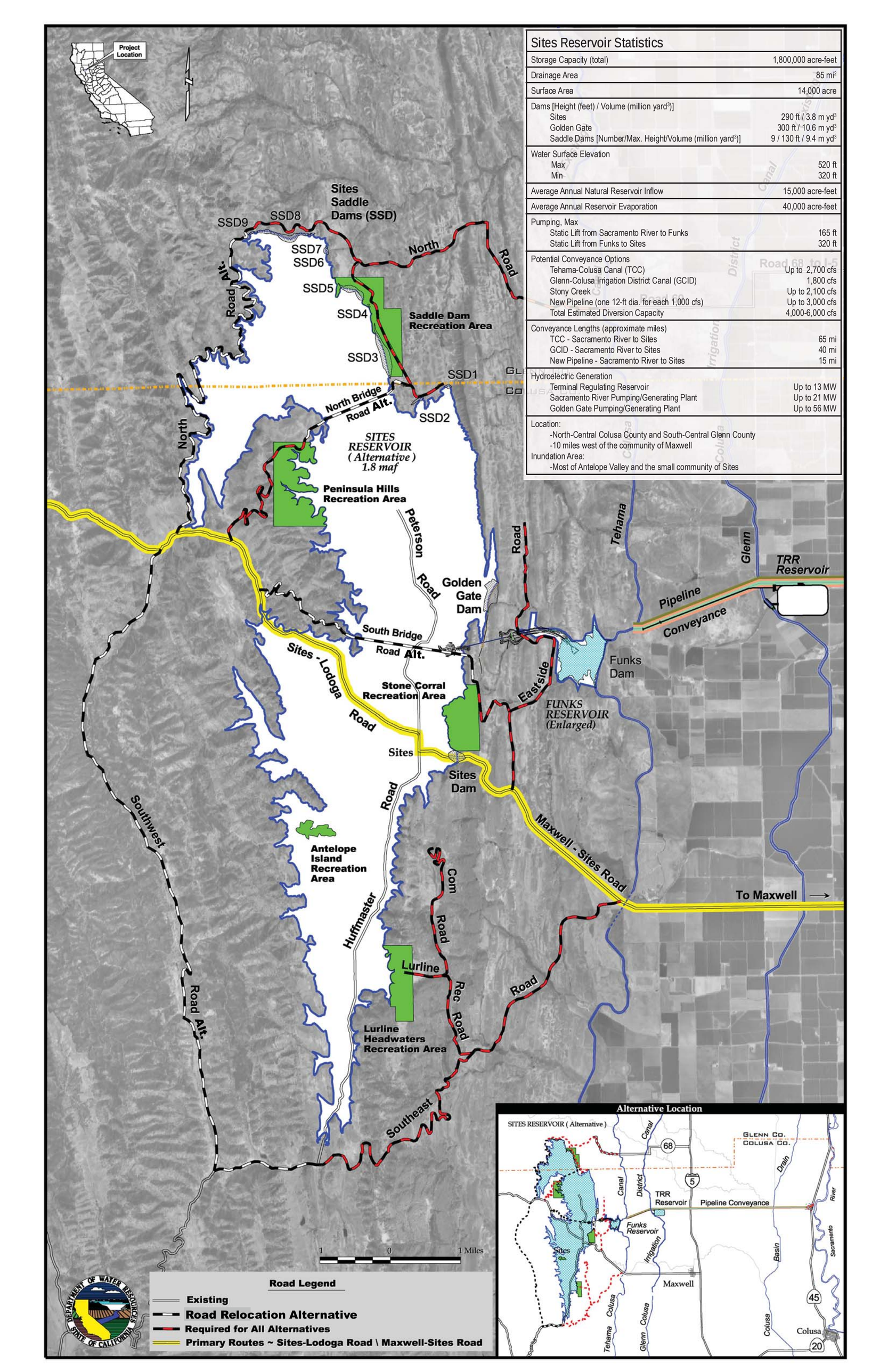
- Long Term Average: 150 – 400 TAF/year
- Driest Periods Average: 150 – 410 TAF/year

Water Quality Release:

- Long Term Average: 70 – 180 TAF/year
- Driest Periods Average: 30 – 190 TAF/year

Ecosystem Restoration Flows:

- Long Term Average: 140 – 240 TAF/year



Sites Reservoir Statistics

Storage Capacity (total)	1,800,000 acre-feet
Drainage Area	85 mi^2
Surface Area	14,000 acre
Dams [Height (feet) / Volume (million yard^3)]	
Sites	290 ft / 3.8 m yd^3
Golden Gate	300 ft / 10.6 m yd^3
Saddle Dams [Number/Max. Height/Volume (million yard^3)]	9 / 130 ft / 9.4 m yd^3
Water Surface Elevation	
Max	520 ft
Min	320 ft
Average Annual Natural Reservoir Inflow	15,000 acre-feet
Average Annual Reservoir Evaporation	40,000 acre-feet
Pumping, Max	
Static Lift from Sacramento River to Funks	165 ft
Static Lift from Funks to Sites	320 ft
Potential Conveyance Options	
Tehama-Colusa Canal (TCC)	Up to 2,700 cfs
Glenn-Colusa Irrigation District Canal (GCID)	1,800 cfs
Stony Creek	Up to 2,100 cfs
New Pipeline (one 12-ft dia. for each 1,000 cfs)	Up to 3,000 cfs
Total Estimated Diversion Capacity	4,000-6,000 cfs
Conveyance Lengths (approximate miles)	
TCC - Sacramento River to Sites	65 mi
GCID - Sacramento River to Sites	40 mi
New Pipeline - Sacramento River to Sites	15 mi
Hydroelectric Generation	
Terminal Regulating Reservoir	Up to 13 MW
Sacramento River Pumping/Generating Plant	Up to 21 MW
Golden Gate Pumping/Generating Plant	Up to 56 MW

Location:
-North-Central Colusa County and South-Central Glenn County
-10 miles west of the community of Maxwell
Inundation Area:
-Most of Antelope Valley and the small community of Sites